Sask
Health
Hearing

Saskatchewan
Health

Annual Report
1977-78

Saskatchewan
Health

Hearing Aid Plan

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Saskatchewan Health Hearing Aid Plan

3211 Albert Street
Regina, Canada
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Annual Report April 1, 1977 to March 31, 1978

Saskatchewan

Minister of Health

Legislative Building
Regina, Canada
S4S 0B3

To the Honourable C. Irwin McIntosh
Lieutenant Governor of Saskatchewan

MAY IT PLEASE YOUR HONOUR:

I am pleased to submit the annual report of the Saskatchewan Hearing Aid Plan for the year ended March 31, 1978.

Respectfully submitted,

Ed. Tchorzewski

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Minister of Health

Saskatchewan

Saskatchewan Health

Deputy Minister

Provincial Health Building
3211 Albert Street
Regina, Canada
S4S 0A6

To the Honourable Ed. Tchorzewski
Minister of Health

Sir:

I am pleased to submit the annual report of the Saskatchewan Hearing Aid Plan for the year ended March 31, 1973.

Respectfully submitted,

M.B. Derrick
Deputy Minister

SASKATCHEWAN HEALTH
HEARING AID PLAN

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I. Highlights for 1977-78

* 8,517 beneficiaries (an increase of 357 (4.4%) over 1976-77) received services from S.H.A.P. Of these, 55% were 65 years of age or over and 16% were 19 years of age or under.

* 18,392 individual services (a decrease of 2,424 (11.6%) from 1976-77) were provided, with an average of 2.15 services per beneficiary.

* the major portion of S.H.A.P.'s clientele continues to be the geriatric patient. Persons 65 years of age and over purchased 65.2% of the aids sold.

* 5,606 beneficiaries (an increase of 716 (14.6%) over 1976-77) received audiological evaluations and 40.8% of these were fitted with hearing aids.

* the average cost of an audiological evaluation was $56.54.

* the average cost of a hearing aid evaluation and follow-up was $113.09.

* the average cost of a complete audiological evaluation, hearing aid fitting and follow-up was $169.63.

* the average cost of a hearing aid to a beneficiary was $106.56, an increase of $11.46 (12.1%) over 1976-77.

* 62% of the services provided by S.H.A.P. were received by beneficiaries residing outside the cities of Saskatoon and Regina.

* A total of 6,854 repairs and minor services were provided during fiscal 1977-78. These are as follows: 947 (13.8%) major repairs (complete reconditioning, replacing microphones etc.) at an average charge to patient of $22.17, 1,948 (28.4%) minor repairs (soldering wires, recasing, etc.) by S.H.A.P. staff at no charge to the patient, 321 (4.7%) repairs completed under warranty, 3,638 (53.1%) minor services (earmolds, tubing, adjustments etc.).

* staff shortages during the year due to difficulties in the recruitment of professional staff resulting in the loss of approximately seven man months.

* permanent facilities and equipment were established in Kindersley, Swift Current and Weyburn.

* 32 auditory trainers are in use by pre-school hearing impaired children. These were purchased in co-operation with the B.P.O. Elks Purple Cross Deaf Detection and Development Program.

* from December 1976 to March 31, 1978 approximately 90% of all nursing homes have been visited by S.H.A.P. audiologists and technicians.

II. Answers to Frequently Asked Questions

Q. How will I know if I need a hearing aid?
A. A number of hearing tests will be performed by a qualified audiologist who will determine the extent of your hearing loss and the effect of this loss on your communicative abilities. If there is any question of the need for medical intervention, referral from a physician will be required before a hearing aid is fitted.

Q. What kind of hearing aid will S.H.A.P. provide?
A. There are four basic hearing aid models. These are the behind-the-ear type, the eye-glass aid, and body aid and the all-in-the-ear type aid. The needs and hearing loss will dictate the choice of aid. S.H.A.P. maintains an on-hand inventory of all models.

Q. How long will it take to receive my hearing aid?
A. If after a hearing evaluation it is determined a hearing aid will assit you an earmold impression is taken and sent to the laboratory to have a custom made earmold made for your ear. This takes about three weeks. In the regional clinics the fitting of the hearing aid is completed at the next regular monthly clinic.

Q. What will a hearing aid do for my hearing loss?
A. A hearing aid is a miniature amplifier. It has the function of making sounds louder although not necessarily clearer. Because of its ability to respond better to some pitches than others, the hearing aid can help compensate for a hearing loss at specific pitches or frequencies. The end result is an improvement in the ability to hear sounds in the environment and the sounds of speech. A hearing aid will not restore hearing to "normal".

Q. What does S.H.A.P. charge for its services?
A. S.H.A.P. provides testing and fitting of hearing aids at no cost to residents holding a valid Saskatchewan Health Services Card. Clients incur the cost of the hearing aid, an ear mold, batteries and other accessories that may be required.

Q. Do I have to buy a hearing aid?
A. No. S.H.A.P. staff will recommend a certain aid for your needs, but only if you will benefit from an aid. The final decision is yours.

Q. How much will the aid, ear mold and batteries cost?
A. The price of an aid varies. S.H.A.P. sells the aid at government cost. During the year the average cost of an aid was about $105.00. An ear mold costs about $6.00 and batteries vary depending on size and quantity.

Q. Suppose I change my mind or don't like the aid I bought?
A. S.H.A.P. has a 60 day money back guarantee. If during that period the client is not satisfied, the cost of the hearing aid will be refunded in full.

Q. What if I have a problem with my aid?
A. S H.A.P. guarantees its aids for one full year. If the aid breaks after a year and the problem is minor, it is repaired without cost. Major repairs require sending the aid back to the manufacturer. If the problem is in adjusting to wearing the hearing aid, S.H.A.P. can also help. S.H.A.P. has sold thousands of aids to thousands of Saskatchewan residents and is aware of the difficulty some people have adjusting to a hearing aid. S.H.A.P.'s expertise is helpful in overcoming a persons' fears and other problems.

Q. Suppose I don't have all the money at once?
A. S.H.A.P. has an interest free installment plan. A nominal one time charge is levied to cover bookkeeping costs.

Q. How do I arrange to see S.H.A.P.?
A. By contacting either of S.H.A.P.'s main clinics. One is located in Saskatoon and one in Regina. In addition, clinics are held in each health region every month. Call the regional health office for an appointment.

III. Organization & Administration

A. **Legislative Authority**

The Saskatchewan Hearing Aid Plan was inaugurated on August 15, 1973, under the Hearing Aid Act, 1973 and as amended in 1977.

B. **Objectives of S.H.A.P.**

The Saskatchewan Hearing Aid Plan was implemented to:

1. Provide high quality hearing aids to residents at greatly reduced costs.

   By arranging purchases of large quantities of hearing aids from major manufacturers and distributors on yearly contracts S.H.A.P. is able to keep the purchase cost of a hearing aid to a minimum.

2. Provide audiological services by qualified professionals.

   Only audiologists with a master's degree are employed by S.H.A.P. The audiologists are assisted by audiometric technicians in the fitting of hearing aids.

3. Ensure necessary follow-up services are provided. This includes periodic monitoring, counselling sessions, and making adjustments to hearing aids where necessary.

4. Provide hearing aid repair service for both S.H.A.P. provided aids and others.

   S.H.A.P. staff perform minor repairs to aids at no cost to the beneficiary. For major repairs the aid is returned to the manufacturer or depot specializing in the repair of all hearing aids. Loaner hearing aids are provided by S.H.A.P. until the patients' aid is returned.

5. Provide special equipment to hearing impaired pre-school children.

   S.H.A.P. assists in the provision of auditory trainers to hearing impaired pre-school children requiring this specialized equipment.

C. **Organizational Overview**

S.H.A.P. is one of the programs of the Community Health Services Branch of Saskatchewan Health.

An Advisory Board was established by the Minister of Health to provide input concerning the operation and services available through the Plan. Members of the Board are selected from various groups representing organizations or agencies that directly or indirectly require S.H.A.P.'s services. Appointments are for a two year period with concurrent terms possible upon the recommendation of the nominating agency.

The board consists of:

Two representatives from the Sask. Medical Association; one from the northern part and one from the southern part of the province —
Dr. E. V. C. Dwersteg
Dr. R. Crook

Two representatives from the field of education; one from the Department of Education and one practicing teacher of the deaf and hard of hearing —
Miss Lorraine O'Connor
Miss J. Dean

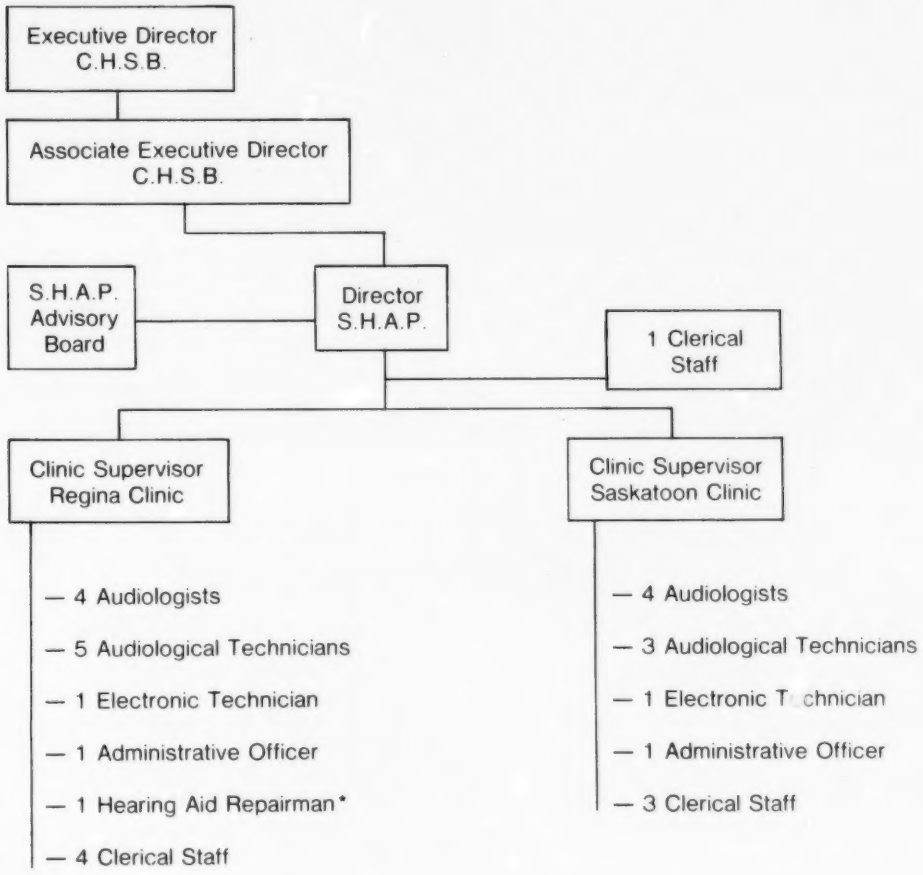
One representative from the Sask. Speech & Hearing Assoc. —
Mrs. K. Pederson

Two consumer representatives appointed by the Minister of Health —
Mrs. M. Slykhuis
Mr. D. Sullivan

Several observers including a public health nursing representative, and the two clinic supervisors attend board meetings, which are usually held twice yearly. The Director of S.H.A.P. acts as Chairman of the Advisory Board.

D. **Organization Chart**

Saskatchewan Hearing Aid Plan



*Position vacant

March 31, 1978

E. **Personnel**

At the termination of the 1977-78 fiscal year, S.H.A.P.'s staff totalled thirty-two. This number includes the director, two clinic supervisors, eight audiologists, eight audiometric technicians, two electronic technicians, one hearing aid repairman, two administrative officers and a clerical staff of eight. The Chief Audiologist position has been eliminated and those responsibilities have been delegated to the director and the two clinic supervisors.

The appointment of S.H.A.P. personnel is made by the Public Service Commission and employees are subject to regulations governing the provincial civil service.

F. **Facilities & Equipment**
Regina Clinic

The Regina Clinic is located on the ninth floor of the McCallum Hill Building at 1874 Scarth Street. Adjacent office space has been added enabling expansion of present space and equipment. This allows S.H.A.P. to continue to provide services from a central location in Regina's business section.

At present the clinic has an adequate array of diagnostic equipment including sound treated booths, audiometers, electroacoustic impedance bridges, tape recorders, tape cassette players, phonographs and other electric equipment. This diagnostic equipment enables S.H.A.P. audiologists and technicians to measure hearing acuity for various sounds and speech. The electro acoustic impedance bridge provides an objective means of measuring middle ear functioning. This procedure is particularly important in the testing of children.

Besides diagnostic equipment, the clinic maintains space and equipment for the fitting of hearing aids; electronic testing, and maintenance of hearing aids and diagnostic equipment; and repair of hearing aids. The electronics and repair areas are fully equipped with highly specialized instruments to calibrate and monitor hearing aids and audiometric equipment. These facilities and the services provided in them are made available to other health professionals upon request.

Saskatoon Clinic

Located on the 6th floor of the Investors Building at 402 - 21st Street East, the Saskatoon Clinic is very much the twin of the Regina Clinic. It has extensive diagnostic facilities and equipment and the electronics, repair, and hearing aid fitting areas are similar to those in the Regina Clinic.

Regional Clinics

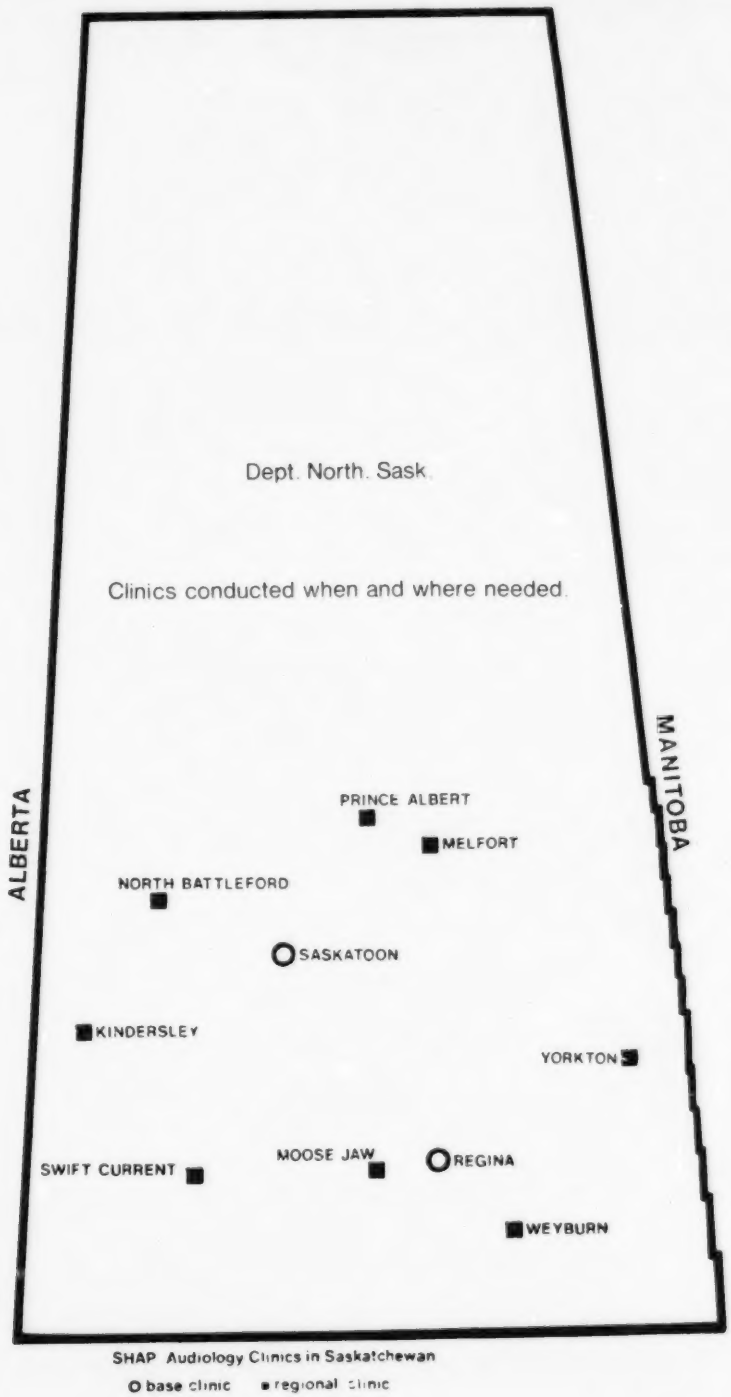
To service the widely dispersed population of Saskatchewan, S.H.A.P. conducts regular clinics in each health region. During 1977-78 permanent clinic facilities were established in Kindersley, Weyburn and Swift Current. Permanent facilities are now available in each of the ten health regions. Each regional clinic has a sound treated booth, audiometer, electro acoustic impedance bridge, tape cassette recorder, and space and equipment for the fitting of hearing aids.

Nursing Homes

Nursing homes are visited on a regular basis or when the need arises. In order to serve these facilities, portable equipment is used. A portable audiometer, impedance bridge and a tape cassette player are used by the audiologist to test the hearing of the nursing home residents. A technician fits the hearing aid and provides the necessary counselling. A subsequent follow-up visit is arranged by the technician to assess the residents' performance with their new hearing aid.

Figure 1

Location of Saskatchewan Hearing Aid Plan Clinics in the Province



IV. Program Activities

A. Eligibility & Benefits

To be eligible for benefits under the Plan a beneficiary must be a resident of Saskatchewan holding a valid Saskatchewan Health Services Card. Some residents are not required to hold a Saskatchewan Health Services Card and still may receive benefits under the Plan, for example members of the R.C.M.P. and members of the Armed Forces. Those who are stationed in the province are covered under the Federal Health Plan, which is charged for services provided.

There is no charge to Saskatchewan beneficiaries for audiological tests received at the clinics. Hearing aids recommended by the Plan's audiologists are sold at cost price. All hearing aids sold through the Plan are guaranteed for one full year from the date of purchase. This guarantee covers any repairs due to defects in manufacturing. In addition a beneficiary can obtain a refund, for any reason, on a hearing aid purchased through the Plan provided it is returned within 60 days from the date of purchase. The Plan offers a credit plan for any purchase in excess of $30.00.

The Plan also provides minor repair service free of charge and major repair service at cost. This service is available to all beneficiaries regardless of where they purchased their hearing aid. Free "loaner" aids are available while aids are being repaired.

Accessories such as cords, receivers and ear molds are sold at cost. Prior to February 1, 1975, hearing aid batteries were available at cost price, but only through the S.H.A.P. Clinics. As a result of numerous requests from hearing aid users to have batteries made available locally, the Plan made arrangements with some pharmacies to handle hearing aid batteries at considerably reduced prices. On March 31, 1978, seventy-four pharmacies (mainly in rural areas) were participating in this arrangement.

During the fiscal year, in co-operation with B.P.O. Elks Purple Cross Deaf Detection & Development Program and their auxilliary The Order of the Royal Purple, S.H.A.P. continued to supply auditory trainers to hearing impaired pre-school children as the need was identified.

Auditory trainers are specialized systems of amplification that allow wireless communication, by means of radio frequencies between the parent and the hard-of-hearing child, over a much wider range than available with conventional hearing aids. Such equipment is extremely expensive and without programs such as this, auditory trainers would be inaccessible to the average family. This equipment is essential for the hearing impaired pre-school child if he is to develop speech and language.

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B. **Nature & Scope of Services**

The services offered by the Plan incorporate audiological evaluations, selection and fitting of hearing aids and follow-up of beneficiaires with a hearing impairment. The Plan co-operates with other agencies in providing services to the hearing impaired in the province.

A beneficiary to the Plan may be self referred or referred by a general practitioner, an otologist, a public health nurse or other agencies. Each beneficiary undergoes a thorough audiological evaluation consisting of pure-tone testing, speech audiometry, impedance testing and other special testing as determined by the audiologist. All cases with medical problems are referred to the family physician or to an otologist. Beneficiaries under eighteen years of age require medical approval before being fitted with a hearing aid.

On the basis of the audiological evaluation a hearing aid evaluation may be recommended to select the most suitable aid. Extensive counselling is provided to the beneficiary by the audiologist and technician in the use, care and maintenance of their aid. Experience elsewhere has shown that many aids dispensed are either not worn at all or are inappropriately worn. Because of this observation, regular follow-up counselling sessions have been established for all beneficiaries.

During the year 32 different models of hearing aids were available from six major manufacturers offering a wide range of features. However, 20 models constituted 69% of sales by volume. The Plan has available an extensive variety of hearing aids to provide the most appropriate hearing aid for the various types of hearing loss, and to satisfy individual consumer preference; aids not carried as a stock item can be special ordered. This greatly increases the number of models S.H.A.P. makes available to the residents of the province.

Hearing aids are obtained from both Canadian and foreign companies. These companies are invited to tender according to requirements developed by the Plan.

Each aid has to be accompanied by a performance data sheet from the manufacturer. Spot checks by the Plan's electronics technicians on performance of a sample of each consignment are conducted to ensure maintenance of quality. In addition, each aid is tested for performance when it is dispensed.

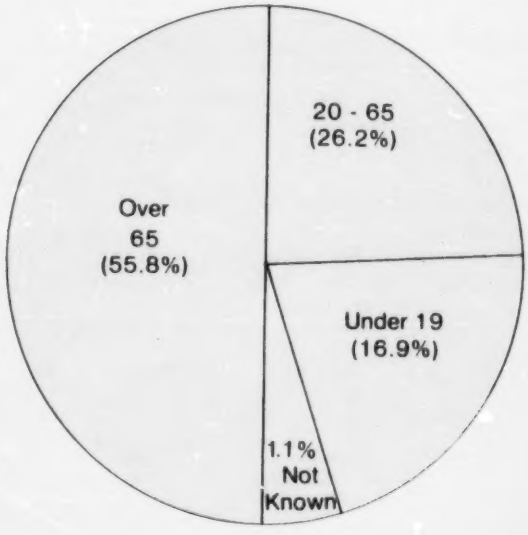
V. Program Statistics

A. **Statistical Overview**

Number and Age of Beneficiaries Services by S.H.A.P.

In 1977-78, 8,517 patients were seen for a variety of services. Of these, the major portion receiving services were 65 years of age or over. During the year these beneficiaries made up approximately 11% of the population of Saskatchewan.* In view of the high correlation between advanced age and hearing loss, it is not unusual that those over 65 years of age made up 55.8% of the total beneficiaries seen by S.H.A.P.

Figure 2
Distribution of Beneficiaries Receiving Services From S.H.A.P. by Age.



The actual number of people seen in each category is as follows:

0-19	1440 (16.9%)
20-65	2229 (26.2%)
over 65	4760 (55.8%)
age not given	88 (1.1%)

S.H.A.P. stresses provision of services to all residents of Saskatchewan and attempt to provide services throughout the province not just in the main population centres of Regina and Saskatoon. As can be seen from Figure 3 the vast majority of S.H.A.P. beneficiaries (67.3%) reside in areas of the province other than Regina or Saskatoon.

*Saskatchewan Hospital Services Plan Statistics, June 30/77

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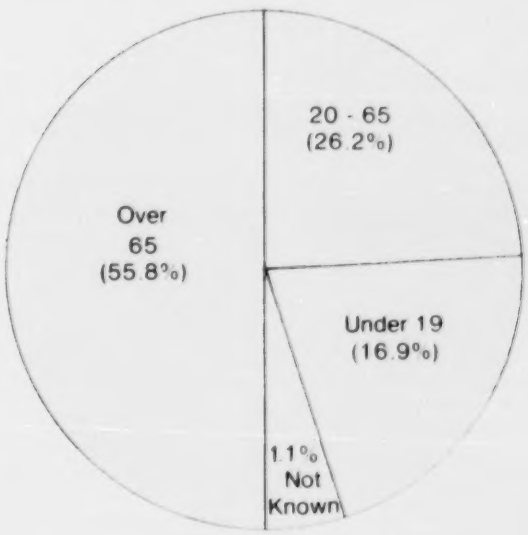

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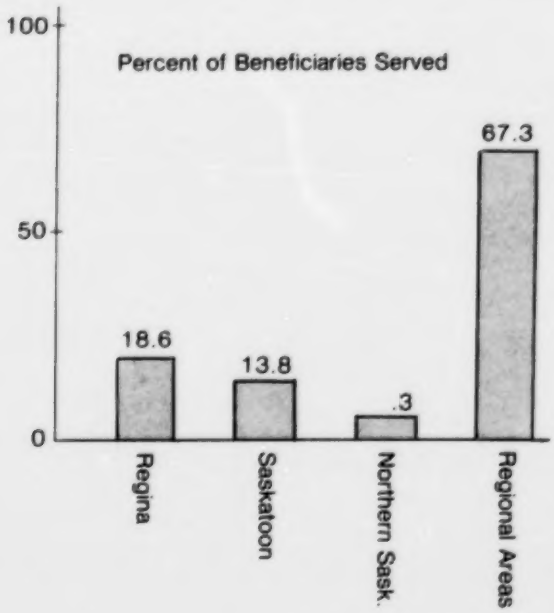
*Saskatchewan Hospital Services Plan Statistics, June 30, 77

Figure 3
Distribution of Services to Beneficiaries by Area of Residence.



A more precise breakdown of patients treated by region of residence and their age is found on Table 1 on page 16.

As of June 30, 1977, 157,059 people lived in Regina or 16.5% of the total population and 138,376 or 14.3% lived in Saskatoon*

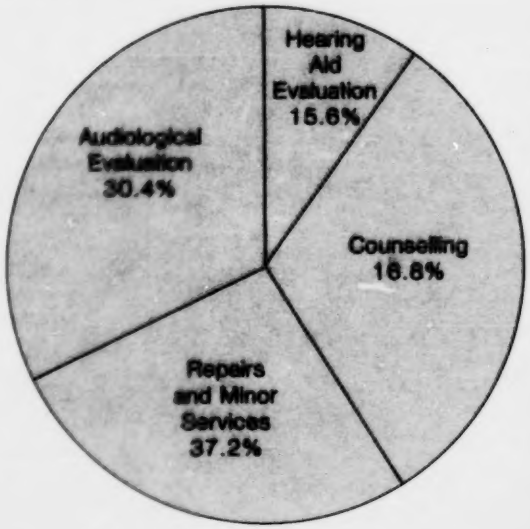
Services Provided

For the purpose of analysis, S.H.A.P.'s services are divided into four main categories. These categories are Audiological Evaluation, Hearing Aid Evaluation, Repairs and Minor Services, and Counselling.

The 8,517 beneficiaries seen at S.H.A.P. clinics were provided with 18,392 individual services. It is readily apparent that we see the majority of our beneficiaries more than once. This is not unusual when you consider that first time hearing aid users often require several visits for counselling and hearing aid adjustments. Figure 4 shows graphically how these four services were distributed.

*Saskatchewan Hospital Services Plan Statistics; June 30/77

Figure 4
Distribution of Types of Services



These percentages reflect the following individual services: audiological evaluation 5,606, hearing aid evaluations 2,833, major repairs and minor services 6,854, and counselling services 3,099, for a total of 18,392 services provided.

Referring to Figure 4, it is apparent that repairs constitute a sizeable portion of S.H.A.P.'s services. The 6,854 repairs and minor services are made up of a variety of services. Minor services include a number of functions such as retubing or venting the earmold to changing the gain or tone adjustments on the hearing aid. Major repairs require the patient's aid to be returned to the factory repair depot at which time a loaner aid is provided if necessary. A total of 1,330 hearing aids were loaned in 1977-78.

Figure 5

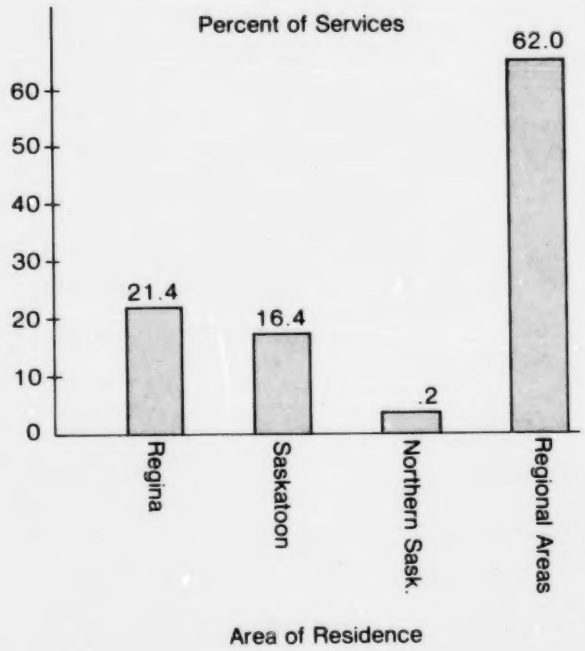
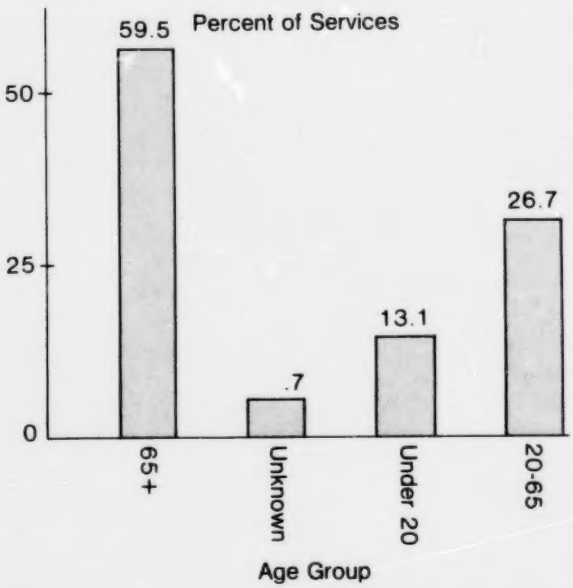


Figure 6



As can be seen from the above figures, the major portion of services provided to residents of areas outside of Regina and Saskatoon account for 11,325 of the 18,392 services or 62.0%. It is also readily apparent that senior citizens (65 and over) receive the majority of S.H.A.P. services (59.5% of total services).

Table 2 on page 16 indicates in detail the distribution of services by age and region of residence.

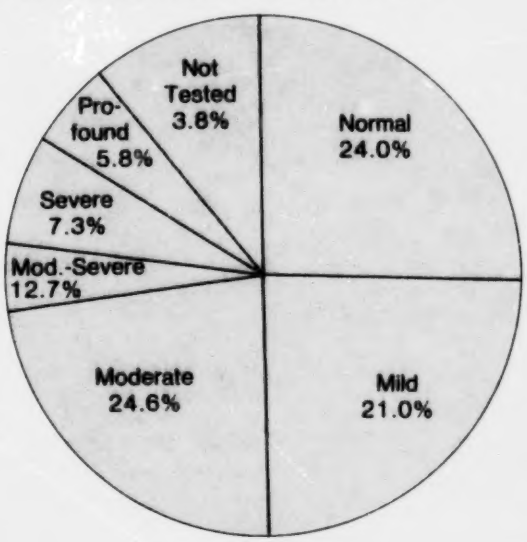
Table 3 on page 17 indicates the services rendered by age of person and type of service.

Table 4 on page 17 indicates the number and type of service by region of residence.

Hearing Problems

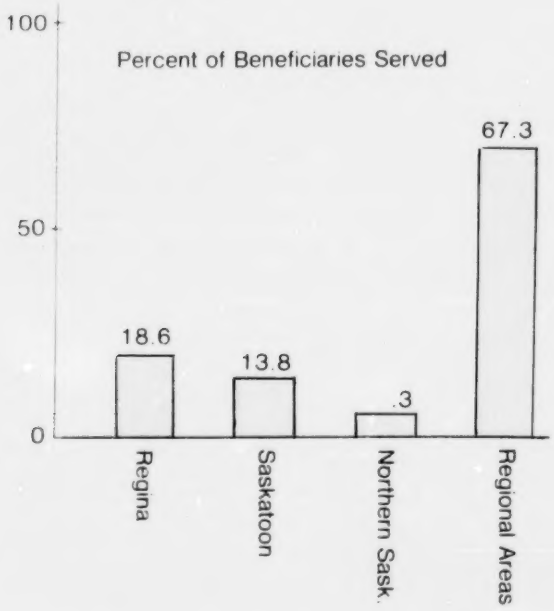
To simplify the statistical analysis of the problems found, a hearing problem was defined as an ear that is not "normal". As a result, a large number of people were considered as having two problems, since their hearing was impaired in both ears. During 1977-78, 11,212 problems were found. Figure 7 shows the relative severity of these losses, while Figure 8 shows the type of impairment (see the glossary for definition of terms on page 21).

Figure 7
Hearing Losses Found, by Degree of Loss



*normal	2,723	(24%)
mild	2,372	(21%)
moderate	2,764	(24.6%)
moderate to severe	1,431	(12.7%)
severe	828	(7.3%)
profound	660	(5.8%)
**not tested	434	(3.8%)

Figure 3
Distribution of Services to Beneficiaries by Area of Residence



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*Saskatchewan Hospital Services Plan Statistics, June 30 77

Figure 4
Distribution of Types of Services

These percentages reflect the following individual services: audiological evaluation 5,606, hearing aid evaluations 2,833, major repairs and minor services 6,854, and counselling services 3,099, for a total of 18,392 services provided.

Referring to Figure 4, it is apparent that repairs constitute a sizeable portion of S.H.A.P.'s services. The 6,854 repairs and minor services are made up of a variety of services. Minor services include a number of functions such as retubing or venting the earmold to changing the gain or tone adjustments on the hearing aid. Major repairs require the patient's aid to be returned to the factory repair depot at which time a loaner aid is provided if necessary. A total of 1,330 hearing aids were loaned in 1977-78.

Figure 5

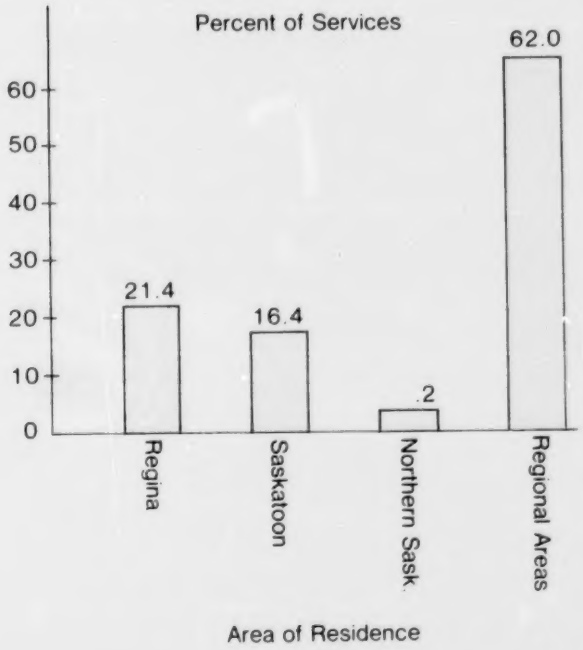
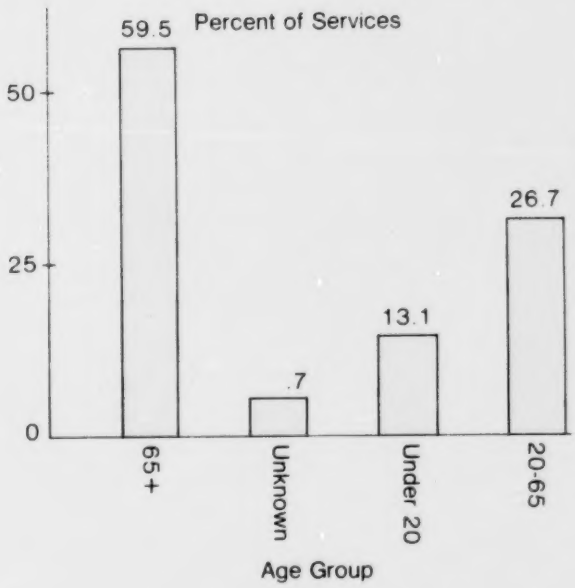


Figure 6



As can be seen from the above figures, the major portion of services provided to residents of areas outside of Regina and Saskatoon account for 11,325 of the 18,392 services or 62.0%. It is also readily apparent that senior citizens (65 and over) receive the majority of S.H.A.P. services (59.5% of total services).

Table 2 on page 16 indicates in detail the distribution of services by age and region of residence.

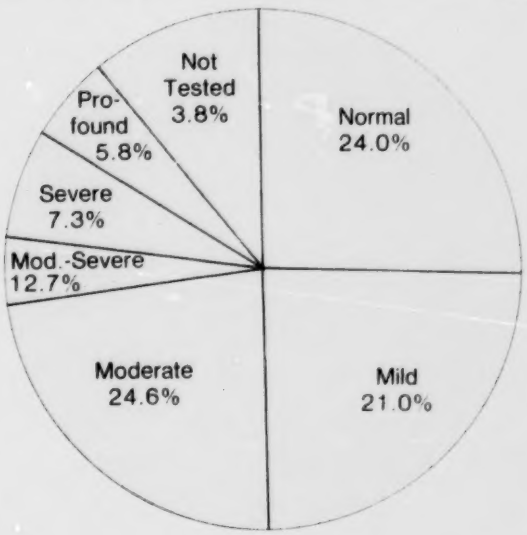
Table 3 on page 17 indicates the services rendered by age of person and type of service.

Table 4 on page 17 indicates the number and type of service by region of residence.

Hearing Problems

To simplify the statistical analysis of the problems found, a hearing problem was defined as an ear that is not "normal". As a result, a large number of people were considered as having two problems, since their hearing was impaired in both ears. During 1977-78, 11,212 problems were found. Figure 7 shows the relative severity of these losses, while Figure 8 shows the type of impairment (see the glossary for definition of terms on page 21).

Figure 7
Hearing Losses Found, by Degree of Loss

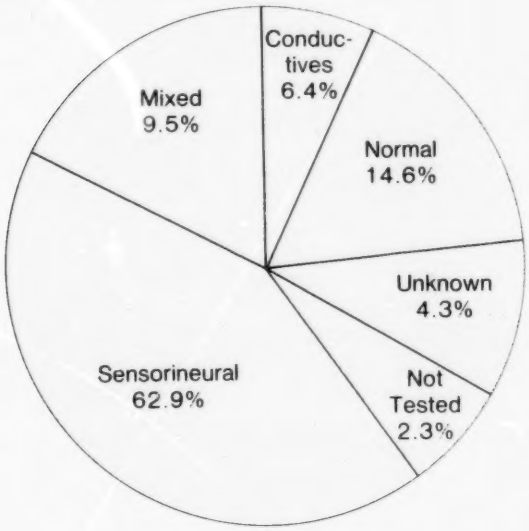


*normal	2,723	(24%)
mild	2,372	(21%)
moderate	2,764	(24.6%)
moderate to severe	1,431	(12.7%)
severe	828	(7.3%)
profound	660	(5.8%)
**not tested	434	(3.8%)

* Because by definition the category of normal hearing is from 0-25 dB HL (Hearing Level) on the audiogram, it is possible to have hearing within normal limits along with a small conductive, mixed, or sensorineural overlay.

** The not-tested category included a number of ears that could not be tested for a variety of reasons.

Figure 8
Hearing Loss is Found, by Type of Loss



normal	1,593	(14.6%)
conductives	736	(6.4%)
mixed	1,072	(9.5%)
sensorineural	7,059	(62.9%)
unknown	513	(4.3%)
not tested	239	(2.3%)

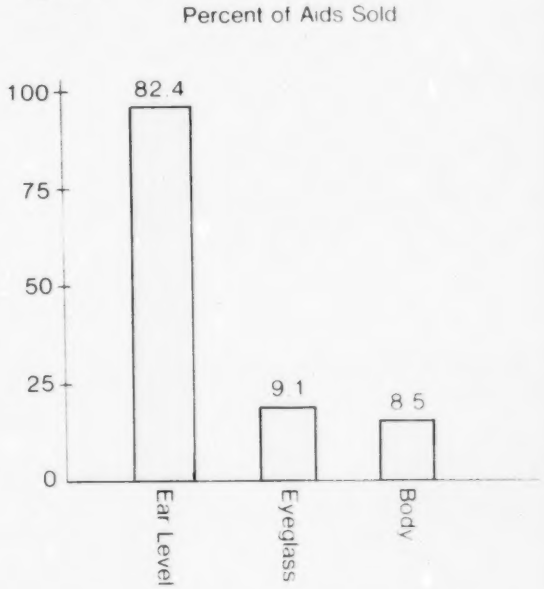
Again, as in previous years, the majority of people tested had a sensorineural hearing loss. This corresponds with the number of geriatric clients seen who predominantly have this type of hearing loss.

Table 5 on page 18 shows in greater detail hearing problems found by degree and type of loss.

Aids Sold

As in previous years, the majority of hearing aids sold were of the behind-the-ear variety. Figure 9 shows that 82.4% of the gross number of hearing aids sold were of this type. This figure has steadily increased from 69.1% in 1973 to 82.4% in 1977-78. The three major types constituted the following percentages of total sales.

Figure 9



In addition to the above 3 main categories, S.H.A.P. also dispensed in-the-ear hearing aids, but their total sales were less than 1% of the gross sales.

As in the past years, the 65 years of age and over accounted for the major portion of aids purchased. Figure 10 shows the distribution of aids sold by age.

* Because by definition the category of normal hearing is from 0-25 dB HL (Hearing Level) on the audiogram, it is possible to have hearing within normal limits along with a small conductive, mixed, or sensorineural overlay.

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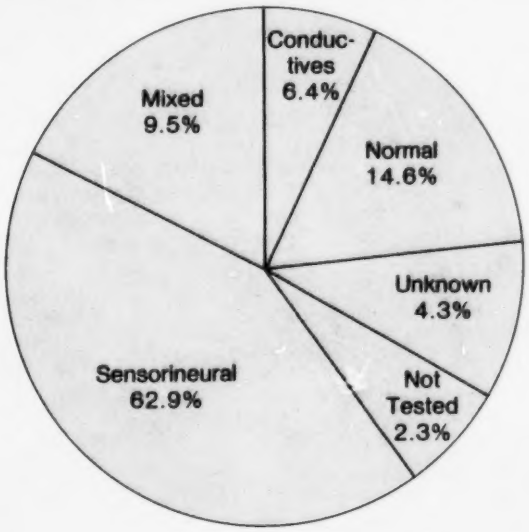

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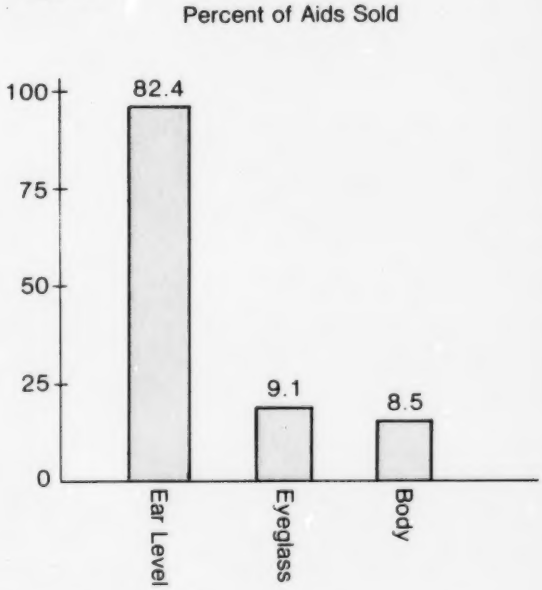
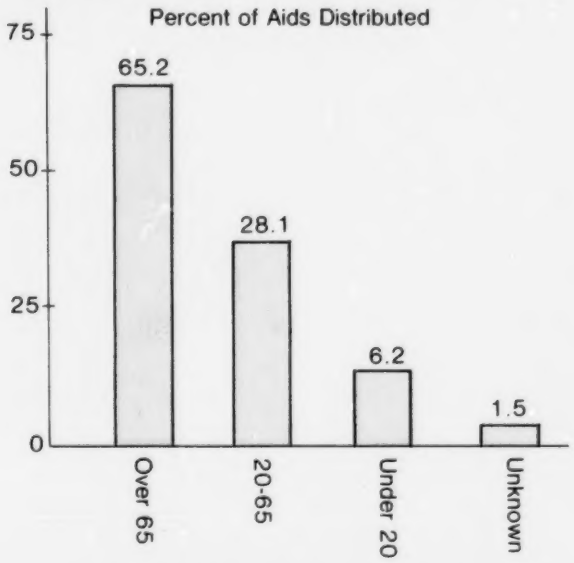


In addition to the above 3 main categories, S.H.A.P. also dispensed in-the-ear hearing aids, but their total sales were less than 1% of the gross sales.

As in the past years, the 65 years of age and over accounted for the major portion of aids purchased. Figure 10 shows the distribution of aids sold by age.

Figure 10

Distribution of Aids Purchased by Age Group



A more detailed presentation of statistics dealing with hearing aids is found in tables 6, 7 and 8 on pages 18 & 19 in section D, statistical tables.

Table 6 deals with the number of aids sold by region of residence and age of the patient.

Table 7 deals with the number of hearing aids sold by clinic and age of the patient.

Table 8 deals with the number of aids sold by age of person and type of hearing aid.

Table 9 deals with the number of aids sold by region of residence and type of hearing aid.

B. **Cost of Services:**

Financial Aspects of the Program

This section summarizes the cost of testing individuals, fitting an aid and providing the necessary follow-up. A detailed description of the method utilized is presented in the Financial Statements on Page 15 .

Of S.H.A.P.'s overhead of $637,372, $316,980 or 49.7% was attributed to providing audiological evaluations whether or not a hearing aid was recommended or sold. The $316,980 was distributed over 5,606 evaluations for an average cost of $56.54 per audiological evaluation. This is an increase of $6.16 (10.9%) over the 76-77 figure of $50.38.

The fitting of hearing aids which includes hearing aid evaluation counselling and follow-up care accounts for 50.3% of S.H.A.P.'s time. Of the overhead of $637,372, $320,392 or 50.3 is attributed to these services when a hearing aid is purchased. Thus the 2,833 hearing aid evaluations, which included evaluating various aids, counselling and follow-up care, averaged $113.09 each. This is an increase of $12.33 (10.9%) over last year's average cost of $100.76 per hearing aid evaluation.

Hearing aid sales of $244,139 were reported during the year. The 2,291 net aids were then sold for an average price of $106.56 each, which is an increase of $11.46 per aid (10.8%) over the previous year.

The total cost of fitting a hearing aid in 77-78 was $169.63 plus $106.56 or $276.19 per aid sold. This is an increase of $29.95 (10.8%) over last year's figure of $246.24.

In summary, the cost of S.H.A.P.'s services increased approximately 10.8% over the previous year.

C. Financial Statements

Statement of Expenses and Reconciliation to Public Account of the Saskatchewan Hearing Aid Plan for the Year Ended March 31, 1978

Item	1977-78	1976-77
Contractual services	$ 34,925	$ 7,686
Depreciation	71,133	60,252
Freight and express	1,965	2,185
Mechanical supplies and parts	11,665	3
Miscellaneous materials and supplies		752
Postage and communications	12,104	10,447
Professional and technical services	3,336	739
Publicity, information, advertising and printing	10,834	3,833
Rents, insurance and utility services	744	45
Repairs and maintenance	4,749	5,248
Salaries	457,869	373,276
Scientific and educational supplies	2,619	4,947
Stationery and office supplies	4,713	999
Travel, sustenance and vehicle expenses	51,551	39,469
TOTAL:	$ 668,207	$509,881

Reconciliation to Public Accounts

Expenses — Purchases	$ 344,412	$281,052
Expenses per expenditure statement	688,207	509,881
Purchase of fixed assets	93,152	55,413
	1,106,771	846,346
Less depreciation expense	71,133	60,252
	$1,034,638	$786,094
Plus decrease (less increase) in accounts payable	943	16,035
TOTAL Expenditures	$1,035,581	$802,129

Taken from the 1977-78 and 1976-77 financial statements prepared by the Saskatchewan Hearing Aid Plan. The statements are prepared on an accrual basis which takes into consideration accounts receivable, accounts payable and depreciation.

Calculation of Cost Per Service and Hearing Aid Sold

		1977-78	1976-77
1.	**Time Required to Provide Each Service**		
	Audiological evaluations (A.E.) normally take 1 hour. A time unit is equal to 1 hour		
	5606 clients received A.E. in 1977-78	5,606 units	4,890 units
	Hearing aid evaluation and follow-ups (H.A.E.F.) takes about 2 hours or 2 time units		
	2833 clients received H.A.E.F. in 1977-78	5,666 units	4,876 units
	Total time units for A.E. & H.A.E.F.	11,272 units	9,766 units
11.	**Overhead Expenses Attributable to A.E. & H.A.E. and Follow-up**		
	Rent paid by Department of Government Services	$ 39,984	$ 36,756
	Overhead per statement of expenses page	668,207	509,881
	Total Overhead	708,191	546,637
	Less: expenses attributable to accessory sales & repair (10%)	(70,819)	(54,664)
	Expenses attributable to A.E. & H.A.E.F.	$637,372	$491,973
111.	**Cost to Provide Each Service**		
	Audiological Evaluations (A.E.)		
	$637{,}372 \times \frac{5{,}606}{11{,}272} \div 5{,}606 = 56.54$	$ 56.54	$ 50.38
	Hearing Aid evaluation and follow-up (H.A.E.F.)		
	$637{,}372 \times \frac{5{,}666}{11{,}272} \div 2{,}833 = 113.09$	113.09	100.76
	Cost of A.E. and H.A.E.F.	$169.63	$151.14
IV.	**Average Charge to Client Purchasing a Hearing Aid**		
	revenue from hearing aid sales $244.139	106.56	95.10
	number of hearing aids sold 2,291		
V.	**Total cost of Providing a Hearing Aid** (including cost to patient)	$276.19	$246.24

M121

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D. Statistical Tables

Table 1

Patients Treated by Region of Residence and Age of Patient

Region of Residence	0-6	7-19	20-44	45-64	65-74	75+	Un-known	TOTAL
Regina City	166	209	164	292	271	484	2	1,588
Regina Rural	45	102	37	156	149	243	1	733
Swift Current	9	30	17	62	97	250	—	465
Moose Jaw	60	81	43	116	128	298	3	729
Weyburn	17	38	32	85	106	209	1	488
Yorkton	34	74	33	114	143	197	—	595
Saskatoon City	33	102	138	214	212	483	—	1,182
Saskatoon Rural	7	30	23	71	68	95	—	294
Rosetown	13	38	22	64	88	158	1	384
Melfort	9	41	25	95	122	272	1	565
Prince Albert	8	27	30	70	92	156	—	383
North Battleford	9	48	39	130	107	227	—	560
Northern Sask.	20	139	40	57	17	7	—	280
In-Prov. (Unknown)	8	41	18	20	19	57	55	218
Out-Prov.	1	1	3	19	2	3	24	53
TOTAL	**439**	**1,001**	**664**	**1,565**	**1,621**	**3,139**	**88**	**8,517**

This indicates that beneficiaries over the age of 65 make up the major portion of those people receiving services from S.H.A.P.

Table 2

Services Rendered by Regions of Residence and Age of Patient

Region of Residence	0-6	7-19	20-44	45-64	65-74	75+	Un-known	TOTAL
Regina City	238	375	376	835	771	1,352	2	3,949
Regina Rural	91	143	73	318	319	548	2	1,494
Swift Current	15	54	32	129	217	562	—	1,009
Moose Jaw	84	153	94	269	299	706	5	1,610
Weyburn	34	57	76	176	205	429	1	978
Yorkton	60	131	60	211	285	400	—	1,147
Saskatoon City	59	260	318	557	599	1,225	—	3,018
Saskatoon Rural	17	65	49	151	153	214	—	649
Rosetown	17	66	33	116	159	305	1	697
Melfort	14	73	49	211	234	574	1	1,156
Prince Albert	11	56	66	140	185	350	—	808
North Battleford	13	93	75	240	224	463	—	1,108
Northern Sask.	21	154	47	73	32	9	—	336
In-Prov. (Unknown)	14	54	25	37	35	82	98	345
Out-Prov.	1	1	5	31	5	10	35	88
TOTAL	**689**	**1,735**	**1,378**	**3,494**	**3,722**	**7,229**	**145**	**18,392**

The major portion (59.5%) of services provided were to those beneficiaries 65 years and over.

NOTE: Services are defined to be: 1) Audiological Evaluation; 2) Hearing Aid Evaluation; 3) Counselling; 4) Refund Hearing Aid; 5) Major Repairs; 6) Issued Loaner; 7) Loaner Returned; 8) Sold Aid (No AE/HAE); 9) Minor Services.

Table 3

Services Rendered, By Age of Person and Type of Service

Age Range	Audio Evals	H-Aid Evals	Type of Service: Scheduled Couns	Scheduled M-Rep	Scheduled M-Ser	Drop-Ins Couns	Drop-Ins M-Rep	Drop-Ins M-Ser	TOTAL
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
0- 6	482	16	13	—	21	21	32	104	**689**
7-19	886	160	53	1	26	92	86	431	**1,735**
20-44	451	173	63	4	25	129	111	422	**1,378**
45-64	973	582	201	8	72	335	278	1,045	**3,494**
65-74	939	643	332	8	88	340	275	1,097	**3,722**
75+	1,866	1,247	655	20	183	841	413	2,004	**7,229**
Not Stated	9	12	9	—	1	15	32	67	**145**
TOTAL	**5,608**	**2,833**	**1,326**	**41**	**416**	**1,773**	**1,227**	**5,170**	**18,392**

This table shows that those beneficiaries over the age of 45 require a greater number of S.H.A.P. services. This correlates closely with the onset of hearing problems in the middle years of life.

Audio Evals = Audiological Evaluations
H-Aid Evals = Hearing Aid Evaluations
Couns = Counselling
M-Rep = Major Repairs — Include those aids returned to the manufacturer for repair
M-Ser = Minor Services — Include making new modifying output or tone, making ear plugs, etc

Table 4

Services Rendered By Region or Residence and Type of Service

Region of Residence	Audio Evals	H-Aid Evals	Scheduled Couns	Scheduled M-Rep	Scheduled M-Ser	Drop-Ins Couns	Drop-Ins M-Rep	Drop-Ins M-Ser	TOTAL
Regina City	1,077	476	290	5	95	671	294	1,041	**3,949**
Regina Rural	514	231	122	6	21	188	99	313	**1,494**
Swift Current	331	197	116	6	39	44	73	203	**1,009**
Moose Jaw	489	250	155	3	44	333	106	230	**1,610**
Weyburn	280	170	88	—	14	105	96	225	**978**
Yorkton	442	199	99	1	27	105	90	184	**1,147**
Saskatoon	726	409	151	1	39	149	165	1,378	**3,018**
Saskatoon Rural	141	96	31	1	19	30	41	290	**649**
Rosetown	245	108	29	1	21	27	29	237	**697**
Melfort	351	243	96	1	17	34	66	348	**1,156**
Prince Albert	236	158	49	2	21	33	59	250	**808**
North Battleford	390	205	79	14	49	18	51	302	**1,108**
Northern Sask.	275	30	2	—	—	—	3	26	**336**
In-Prov. (Unknown)	76	44	19	—	9	29	43	125	**345**
Out-Prov.	33	17	—	—	1	7	12	18	**88**
TOTAL	**5,608**	**2,833**	**1,326**	**41**	**416**	**1,773**	**1,227**	**5,170**	**18,392**

The major portion of S.H.A.P. services (62.0%) been provided to those residents outside the cities of Regina and Saskatoon.

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The major portion (59 5%) of services provided were to those beneficiaries 65 years and over

NOTE Services are defined to be 1) Audiological Evaluation. 2) Hearing Aid Evaluation. 3) Counselling. 4) Refund Hearing Aid. 5) Major Repairs. 6) Issued Loaner. 7) Loaner Returned. 8) Sold Aid (No AE HAE). 9) Minor Services

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Moose Jaw	489	250	155	3	44	333	106	230	1,610
Weyburn	280	170	88	—	14	105	96	225	978
Yorkton	442	199	99	1	27	105	90	184	1,147
Saskatoon	726	409	151	1	39	149	165	1,378	3,018
Saskatoon Rural	141	96	31	1	19	30	41	290	649
Rosetown	245	108	29	1	21	27	29	237	697
Melfort	351	243	96	1	17	34	66	348	1,156
Prince Albert	236	158	49	2	21	33	59	250	808
North Battleford	390	205	79	14	49	18	51	302	1,108
Northern Sask	275	30	2	—	—	—	3	26	336
In-Prov (Unknown)	76	44	19	—	9	29	43	125	345
Out-Prov	33	17	—	—	1	7	12	18	88
TOTAL	**5,606**	**2,833**	**1,326**	**41**	**416**	**1,773**	**1,227**	**5,170**	**18,392**

The major portion of S H A P services (62 0%) been provided to those residents outside the cities of Regina and Saskatoon

Table 5

Hearing Problems Found by Degree and Type of Loss

Type	Normal	Conductive	Sensorineural	Mixed	Unknown	Not tested	TOTAL
Degree							
Normal	1,588	318	722	24	45	26	2,723
Mild	2	267	1,945	105	36	17	2,372
Moderate	0	100	2,403	229	25	7	2,764
Moderately Severe	0	41	1,075	263	39	13	1,431
Severe	0	4	479	303	36	6	828
Profound	0	0	430	147	69	14	660
Not Tested	3	6	5	1	263	156	434
TOTAL	**1,593**	**736**	**7,059**	**1,072**	**513**	**239**	**11,212**

Shows that the majority of hearing losses were sensorineural and were predominantly mild or moderate.

Table 6

Hearing Aids Sold by Region of Residence and Age of Patient

Region of Residence	0-6	7-19	22-44	45-64	65-74	75+	Unknown	TOTAL
Regina City	2	21	31	90	98	126	—	368
Regina Rural	—	5	13	41	48	81	—	188
Swift Current	—	8	6	25	32	80	—	151
Moose Jaw	—	13	11	36	51	83	—	194
Weyburn	1	5	5	20	37	67	—	135
Yorkton	—	11	3	40	44	67	—	165
Saskatoon City	3	21	34	82	54	135	—	329
Saskatoon Rural	—	8	8	19	19	27	—	81
Rosetown	—	7	4	18	31	33	—	93
Melfort	1	7	8	38	47	96	—	197
Prince Albert	—	5	10	25	32	60	—	132
North Battleford	—	13	10	34	38	85	—	180
Northern Sask	—	5	1	11	9	2	—	28
In-Prov (Unknown)	2	3	4	9	4	5	10	37
Out-Prov	—	—	1	9	2	1	—	13
TOTAL	**9**	**132**	**149**	**497**	**546**	**948**	**10**	**2,291**

The majority of hearing aids (65.2%) were purchased by those beneficiaries 65 years and over residing in areas of the province outside the cities of Regina and Saskatoon.

NOTE: This report prints netted results (The entries represent # aids sold less # aids refunded)

Table 7

Hearing Aids Sold by Clinic and Age of Patient

Clinic	0-6	7-19	20-44	45-64	65-74	75+	Un-known	TOTAL
Regina	3	32	48	166	188	238	1	676
Swift Current	—	5	4	26	29	62	1	127
Moose Jaw	—	9	12	28	39	56	1	145
Weyburn	—	3	2	9	16	36	1	65
Estevan	—	—	1	4	9	17	—	31
Yorkton	—	3	2	31	27	52	2	117
Saskatoon	6	69	60	161	139	216	5	656
Rosetown	—	—	—	1	3	13	—	17
Kindersley	—	—	—	5	8	6	—	19
Biggar	—	—	—	1	2	2	—	5
Melfort	—	—	6	24	32	54	—	116
Prince Albert	—	3	5	15	24	38	—	85
North Battleford	—	7	8	18	17	36	—	86
Lloydminster	—	—	—	4	5	13	—	22
LaRonge (North-Sask.)	—	1	1	—	3	2	—	7
Nursing Homes	—	—	—	4	5	107	1	117
TOTAL	**9**	**132**	**149**	**497**	**546**	**948**	**10**	2,291

Over half the number of hearing aids sold were through our two main clinics in Regina and Saskatoon

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Aids Sold by Age of Person and Type of Aid

Type	Ear Level	Glasses	Body	Cros	Iros	Bicros	Bone Con-duction	Total	Less Re-funds	TOTAL
Age										
0- 6	6	—	2	—	—	—	1	9	—	9
7-19	120	1	15	2	—	1	—	139	7	132
20-44	134	10	7	3	—	5	3	162	13	149
45-64	453	33	15	21	1	13	5	541	44	497
65-74	500	57	16	20	—	4	3	600	54	546
75+	883	53	99	11	—	6	3	1055	107	948
N S	13	—	—	—	—	—	—	13	3	10
TOTAL	**2109**	**154**	**154**	**57**	**1**	**29**	**15**	2519	228	2291

Shows ear level aids account for over 80% of all aids sold regardless of age

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Moose Jaw	—	13	11	36	51	83	—	194
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Yorkton	—	11	3	40	44	67	—	165
Saskatoon City	3	21	34	82	54	135	—	329
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Melfort	1	7	8	38	47	96	—	197
Prince Albert	—	5	10	25	32	60	—	132
North Battleford	—	13	10	34	38	85	—	180
Northern Sask.	—	5	1	11	9	2	—	28
In-Prov. (Unknown)	2	3	4	9	4	5	10	37
Out-Prov.	—	—	1	9	2	1	—	13
TOTAL	**9**	**132**	**149**	**497**	**546**	**948**	**10**	**2,291**

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Yorkton	—	3	2	31	27	52	2	**117**
Saskatoon	6	69	60	161	139	216	5	**656**
Rosetown	—	—	—	1	3	13	—	**17**
Kindersley	—	—	—	5	8	6	—	**19**
Biggar	—	—	—	1	2	2	—	**5**
Melfort	—	—	6	24	32	54	—	**116**
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North Battleford	—	7	8	18	17	36	—	**86**
Lloydminster	—	—	—	4	5	13	—	**22**
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Age										
0- 6	6	—	2	—	—	—	1	9	—	**9**
7-19	120	1	15	2	—	1	—	139	7	**132**
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45-64	453	33	15	21	1	13	5	541	44	**497**
65-74	500	57	16	20	—	4	3	600	54	**546**
75+	883	53	99	11	—	6	3	1055	107	**948**
N.S.	13	—	—	—	—	—	—	13	3	**10**
TOTAL	**2109**	**154**	**154**	**57**	**1**	**29**	**15**	**2519**	**228**	**2291**

Shows ear level aids account for over 80% of all aids sold regardless of age.

Table 9

Aids Sold by Region of Residence and Type of Aid

Type	Ear Level	Glasses	Body	Cros	Iros	Bicros	Bone Conduction	Re- funds	TOTAL
Health Regions									
# 1 Swift Current	148	7	13	3	—	—	—	20	151
# 2 Moose Jaw	180	11	15	6	—	3	2	23	194
# 3 Weyburn	119	12	8	3	—	3	2	12	135
# 5 Regina Rural	173	11	8	8	—	2	2	16	188
# 7 Rosetown	90	5	3	2	—	1	—	8	93
# 8 Saskatoon Rural	71	5	6	2	—	3	1	7	81
#10 Yorkton	164	10	3	3	—	1	—	16	165
#11 Melfort	181	3	16	3	—	4	3	13	197
#12 Prince Albert	117	7	9	8	—	1	—	10	132
#13 North Battleford	154	8	22	—	—	1	—	5	180
Dept. of Northern Sask.	25	1	2	1	—	—	—	1	28
Regina City	350	44	19	12	1	6	4	68	368
Saskatoon City	284	29	26	6	—	4	1	21	329
Not Stated	53	1	4	—	—	—	—	8	50
TOTAL	2,109	154	154	57	1	29	15	228	2,291

# Indicates ear level aids were the most frequently recommended type in all geographic areas.

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Aids Sold by Region of Residence and Type of Aid

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Health Regions									
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#10 Yorkton	164	10	3	3	—	1	—	16	165
#11 Melfort	181	3	16	3	—	4	3	13	197
#12 Prince Albert	117	7	9	8	—	1	—	10	132
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Regina City	350	44	19	12	1	6	4	68	368
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Not Stated	53	1	4	—	—	—	—	8	50
TOTAL	**2,109**	**154**	**154**	**57**	**1**	**29**	**15**	**228**	**2,291**

Indicates ear level aids were the most frequently recommended type in all geographic areas.

VI. Glossary of Terms

Audiologist — A person with highly specialized training in the assessment and rehabilitation of persons with impaired hearing.

dB or decibels — dB is the abreviation for decibel: because the range of sensitivity of the inner ear is so large (the loudest sound we can tolerate is millions of times more powerful than the softest we can hear), a scale based upon logarithms was devised. The scale runs approximately from the softest sound (about 0 dB) to 140 dB at the maximum. The reference point for the dB scale is arbitrary.

Audiogram — A graph recording the threshold of sensitivity of hearing measured at several discrete frequencies.

Earmold — a "plug type" device that is custom made to fit the individual ear. It serves the function of coupling the aid to the ear canal.

Auditory Trainers — Specialized system of amplification that allows wireless communication, by means of radio frequencies, between parent and child. This equipment is essential for the pre-school hearing impaired child if he is to develop speech and language.

Audiological Evaluation — A battery of tests to determine a person's hearing acuity for various sounds and speech. The battery may include site of lesion tests to determine where the problem lies within the auditory system.

Hearing Aid Evaluation — a battery of tests designed to determine hearing aid performance and the benefit the patient would be expected to receive by wearing the aid.

Major Repairs — Repair of the electronic components of a hearing aid. These aids are sent to the manufacturer or to a repair depot.

Minor Services — Repair to non-electronic components of a hearing aid and to auxillary equipment (i.e. ear molds, tubing), or those repairs completed at the S.H.A.P. clinics.

Normal Hearing — Thresholds better than the 25 dB accepted standard.

Mild Loss — Greater than 20 dB and less than 40 dB for frequencies important for understanding speech.

Moderate Loss — Greater than 40 dB and less than 70 dB for frequencies important for the understanding of speech.

Severe Loss — Greater than 70 dB but less than 90 dB for frequencies important for the understanding of speech.

Profound Loss — Greater than 90 dB for frequencies important for understanding speech.

Conductive Loss — A hearing loss due to a problem in the system that transfers sound from the environment to the inner ear. Typical conductive lesions found in the middle ear are otitis media, otosclerosis, lesion of the tympanic membrane, and traumatic injury of the tiny bones of the middle ear. This type of loss is often aided by medical intervention.

Sensorineural Hearing Loss — Is caused by damage within the cochlea or inner ear. It involves damage to the sensory cells and in most cases cannot be corrected medically. Typical losses of this type result from the aging process and noise exposure. Certain disease processes, head trauma, toxic agents, etc. can also cause sensorineural loss.

Mixed Loss — Has both conductive and sensorineural components.

Behind-the-ear or Ear-Level Aid — Usually about 2 or 3 inches long it rests behind the ear and connects to the ear mold via a hook type arrangement which rests over the top of the ear.

Body Aid — Usually worn in the pocket, it is connected to the ear mold via a wire. These aids tend to be the most powerful.

Glasses Aid — Are built into the temple pieces of a pair of glasses.

In-the-Ear Aids — Fit in the ear canal. These are the least powerful and most prone to fitting problems of any aid.

Bone Conductor Aid — A bone conductor has a mechanical vibrator worn on the mastoid (bone behind the ear) which vibrates and stimulates the cochlea without the middle ear being involved.